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## What is Claimed:

- 1                   1.     An FM transmitter with integrated modulator used to transfer text  
2     data from an auxiliary audio device to an FM receiver comprising  
  
3                   a processor, coupled to the auxiliary audio device, that receives the text  
4     data to be transmitted to the FM receiver and processes the data to develop a processed  
5     data signal;  
  
6                   a signal combiner that combines the processed data signal with an audio  
7     signal provided by the consumer electronic device and encoded according to a frequency  
8     modulation (FM) standard to generate a composite FM signal for transmission to the FM  
9     receiver.
- 1                   2.     An integrated transmitter according to claim 1, wherein:  
  
2                   the processor is configured to process the data signal according to a radio  
3     data system (RDS) standard to generate a modulated RDS signal as the processed data  
4     signal; and  
  
5                   the signal combiner sums the processed data signal and the encoded audio  
6     signals.
- 1                   3.     An integrated transmitter according to claim 2, wherein the processor  
2     is a programmed processor including software that controls the processor to generate the  
3     modulated RDS signal as the processed data signal.
- 1                   4.     An integrated transmitter according to claim 2, further including:  
  
2                   an analog FM stereo encoder which generates the FM encoded audio signal  
3     as an analog FM encoded audio signal;

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4                   a digital to analog converter coupled to the processor to receive the  
5   processed data signal and to provide an analog data signal corresponding to the processed  
6   data signal; and

7                   a band-pass filter that filters the analog data signal to exclude signal  
8   components outside of a range of frequencies acceptable for an RDS modulated signal;

9                   wherein the signal combiner sums the band-pass filtered analog data signal  
10   and the analog FM signal to produce the composite FM signal.

1                   5.     An integrated transmitter according to claim 2, wherein:

2                   the processor is configured to receive a digital audio input signal and to  
3   encode the digital audio signal to provide a digital FM encoded audio signal; and

4                   the signal combiner is summing circuitry in the processor that sums the  
5   digital FM encoded audio signal and the modulated RDS signal to generate the composite  
6   FM signal.

1                   6.     An integrated transmitter according to claim 1, wherein:

2                   the processor is configured to convert the text data into speech to provide a  
3   speech signal and to encode the speech signal as an FM data signal to provide the FM data  
4   signal as the processed data signal; and

5                   the signal combiner time-division multiplexes the FM data signal and the FM  
6   encoded audio signal to generate the composite FM signal.

1                   7.     An integrated transmitter according to claim 6, wherein the processor  
2   is a programmed processor including software that controls the processor to convert the  
3   text data into speech to provide the speech and to encode the speech signal as an FM data  
4   signal to provide the FM data signal as the processed data signal.

1                   8.     An integrated transmitter according to claim 6, wherein:

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2           the processor is configured to receive a digital audio input signal and to  
3    encode the digital audio signal to provide a digital FM encoded audio signal; and

4           the signal combiner is multiplexing circuitry in the processor that time-  
5    division multiplexes the digital FM encoded audio signal and the FM data signal to generate  
6    the composite FM signal.

1           9.     An integrated transmitter according to claim 1, wherein the processor  
2    is the control processor of the auxiliary audio device.

1           10.    An integrated transmitter according claim 9, wherein the auxiliary  
2    audio device is a device selected from a group consisting of a CD player, a CD-MP3 player,  
3    a universal satellite receiver and a digital audio broadcast receiver.

1           11.    An integrated transmitter according to claim 10, further including a  
2    wireless remote control receiver, coupled to the auxiliary audio device to receive  
3    commands to control the auxiliary audio device and to receive commands to select text  
4    data to be transmitted to the FM receiver.

1           12.    An integrated transmitter according to claim 1, wherein the processor  
2    and signal combiner are implemented as a separate device that is configured to be  
3    attached to line and data output terminals of the auxiliary audio device.